

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Salt Lake Field Office 2370 South 2300 West Salt Lake City, Utah 84119 ph: (801) 977-4300; Fax: (801) 977-4397 www.ut.blm.gov/saltlake\_fo



IN REPLY REFER TO: 3809 (UTW011) UTU-73999

JUN 2 2 2010

Rick Havenstrite Desert Hawk Gold Corporation 8921 North Indian Trail Road, Ste. #288 Spokane, Washington 99208

Dear Mr. Havenstrite:

On October 15, 2009, the Bureau of Land Management (BLM) Salt Lake Field Office received the first draft of your proposed modification to the Plan of Operations for the Cactus Millsite serialized UTU-73999 (UDOGM permit M/045/049).

The BLM subsequently requested additional information from you on February 10, and April 30, 2010, to be able to consider your Plan complete. The Utah Division of Oil Gas and Mining (DOGM) requested additional information from you on February 1, March 31, and May 19, 2010. To date, we have received a portion of the information requested, however, your plan still does not contain a complete description of the proposed operations under 43 CFR 3809.401(b).

On May 4, we received an e-mail response from your consultant, North American Exploration (NAE) addressing a portion of the information requested in the letter from BLM dated April 30, 2010. On June 10, 2010, BLM received the fourth version of your Plan Amendment which also provided some, but not all of the additional information requested by BLM and DOGM.

In order for the BLM to determine that your Plan Amendment is complete and facilitate the technical review of your submittal, you must provide this office with the following additional information required by 43 CFR 3809.401:

- 1) As part of your description of operations, please show in plan view, the layout of your process piping including water lines, acid lines, and transfer lines for process solutions. These should be shown either on Figure 5 (Proposed Surface Facilities) or on a separate figure. Describe the range of anticipated flow rates for your leach circuit.
- 2) Your March 4, 2010, e-mail response states that the "operation will be a 24/7 operation with no seasonal shutdowns". Please incorporate this statement into the text of your Plan Amendment as part of your schedule of operations.
- 3) The tentative schedule described in section 106.2 of your Plan Amendment states that you will "Complete Leach Operation" in 2013, "Rinse/Neutralize Ore" in 2016, and "Reclaim" beginning in 2016. Section 106.9 of your Plan states that once leaching operations have been completed, the heap will be rinsed and left in place for a period of one year. Please reconcile this discrepancy in your project chronologies.

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- 4) Please state in your Plan Amendment, the strength of the sulfuric acid solution (g/L) you will be applying to the heap.
- 5) In many intrusive igneous rocks such as the granodiorite you propose to process, the average crustal abundance of radionuclides is relatively high. Leach solutions have the potential to mobilize any radionuclides present in the heap material. Therefore the BLM requests that you prepare a radiation monitoring plan that describes how you will provide early detection of potential problems, and supply information that will assist in directing corrective actions should they become necessary. Include the type and location of monitoring devices, sampling parameters and frequency, analytical methods, reporting procedures, and procedures to respond to adverse monitoring results as required by §3809.401(b)(4).
- 6) Please provide an Emergency Response Plan and Spill Contingency Plan [§3809.401(b)(2)(vi)]. You must identify the types, quantities, and locations of all regulated materials (including the ones listed in Appendix 7 of your Plan Amendment) on the site, locations of safety equipment and neutralizing chemicals, and the specific actions to be taken for different types, sizes and location of spills and releases.
- 7) For example, describe how you will deal with a release of acid forming, toxic, or other deleterious materials (i.e. leachate solution) into the environment, and what measures you will take to prevent such a release. Also describe your plans for the safe handling and storage of these materials as well as the materials/chemicals used by your facility. Your plan should identify those persons or positions responsible for responding to spills or releases of regulated fluids/materials at the site. Chains of authority and responsibility should be clearly identified. You will be required to post the Emergency Response Plan on site.
- 8) The BLM does not believe that the proposed 6 inches of growth medium is an adequate cover for the heap because of the potential long-term effects of root growth, erosion, and infiltration. Your cover design should incorporate additional cap material consisting of clay and/or liner material such as HDPE, Geosynthetic, etc. of a sufficient thickness to ensure minimal infiltration of meteoric water into the heap and prevent long term drain down issues. You must provide relevant technical analysis supporting the design specifications of your cap/cover (see #8 below).
- 9) In order to provide adequate baseline data for proper characterization and handling of mined and processed rock to limit its potential to generate acid or liberate other constituents, including metals, into the environment, the BLM requires the following Rock Characterization analysis and testing information:

#### Heap Material

Your sampling program must ensure a statistically adequate sample population. You must also provide a description of sampling procedures including how the samples were selected, collection methods, and sample locations.

- I. Mineralogical analysis A minimum of four representative samples per rock type. A BLM geologist must be present during sample collection a minimum forty-eight hour advance notification is required.
  - 1. XRD X-Ray Diffraction
  - 2. XRF X-Ray Fluorescence (could include use of portable units)
  - 3. Petrology
  - 4. Petrography (incident light, transmitted light)
  - 5. SEM/EDX/NIR/MLA

## II. Static testing

- 1. ABA Acid/Base Accounting
- 2. Net acid/alkaline production (AP, NP, NNP)
- 3. MWMP Meteoric Water Mobility Procedure (ASTM E-2242-02)
- 4. NCV Net Carbonate Value

## III. Kinetic Testing

1. Humidity cell/column leach test (ASTM D5744-07)

Although a test duration as short as 20 weeks may be suitable for some samples, more recent research indicates that test durations well beyond 20 weeks may be required depending on the objectives of the test and the test results. Identified test protocols contain specific criteria to determine when tests may end. BLM must be consulted prior to terminating the tests. Regardless of the data, 20 weeks is the absolute minimum test period.

2. BAPP Test-Biological Acid Producing Potential

## IV. Infiltration Modeling

1. Heap Leach Draindown Estimation (Modeling required. Can be calculated from worksheets available at the State of Nevada BLM webpage: see

http://www.blm.gov/nv/st/en/prog/minerals/mining.html)

#### Cap/Cover Material

- I. Geotechnical Analyses
  - 1. Grain size (USCS)
  - 2. Atterburg limits
  - 3. Initial moisture content
  - 4. Dry bulk density
  - 5. Calculated porosity
  - 6. Constant head analyses for saturated hydraulic conductivity test
  - 7. Hanging column
  - 8. Pressure plate
  - 9. Unsaturated hydraulic conductivity
  - 10. Proctor compaction

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10) Please provide a Water Resource Report, characterizing the water resources of the site, prepared by or under the direction of a professional engineer or other ground water

professional. The report should include all of the information required by the Utah Division of Water Quality (DWQ) for their Ground Water Discharge Permit application (Part C.8 - Hydrologic Report). It should also contain the specific elements outlined below:

### I. Geology/Hydrogeology

- 1. Geology –include maps, cross sections with grids, scales. Structure should include faults, fractures, and joints. Stratigraphy should include geologic formations and thicknesses, soil types and thicknesses, depth to bedrock.
  - a. Regional geology
  - b. Local geology
- 2. Hydrogeology
  - a. Areal regional aquifer and ground water conditions (maps, cross sections)
  - b. Site specific ground water conditions
  - a. Vadose zone
  - b. Perched water table
  - c. Unconfined water table
  - d. Confined water table
- II. Springs/Streams and Well Inventories
  - 1. Location (including UTM coordinates)
  - 2. Flow/Production
    - a. Perennial springs and streams (include historical flows)
    - b. Intermittent springs and streams (include historical flows)
    - c. Well production (include average/peak or other baseline data)
  - 3. Quality (chemistry)
  - 4. Temperature
  - 5. Well drilling log or geologic log
  - 6. Water rights
  - 7. Jurisdictional waters
  - 8. Habitat types, areal distributions and number of acres (include maps)

## III. Hydrologic System

- 1. Meteorology (use on-site meteorological station data)
  - a. Ambient Temperature (min/max), Relative Humidity, Wind Speed (max gust/hr) & Wind Direction, Total Precipitation, Solar Radiation; at a minimum with a data logger.
- 2. Recharge
  - a. Type
  - b. Distribution
- 3. Discharge
  - a. Type
  - b. Distribution
- 4. Potentiometric surface or water table
- 5. Groundwater flow
  - a. Gradient and flow direction
  - b. Velocity
- 6. Hydraulic boundary conditions/hydrologic divides
  - a. Type
  - b. Distribution
- IV. Hydrologic Budget (summary of Section III.)
- V. Conceptual Groundwater Model

- 1. Ground and surface water systems (based on site specific field data)
- 2. Project hydrogeologic setting (relative to regional hydrology)
- 11) In order to show that the proposed uses and activities will prevent or avoid unnecessary or undue degradation, you must show that they will conform to all applicable federal and state environmental standards by obtaining all required permits and authorizations and meeting the standards required by state and federal law. Copies of the approved permits and any new standards/procedures resulting from these permits should be incorporated into your plan of operations. This includes the ground water discharge permit required by the Utah Department of Environmental Quality and the air quality permit required for your crushing operation. It also includes all the information that has been requested to date by DOGM including the vegetation survey.

In accordance with §3809.412, you are not authorized to engage in any of the activities described in your Plan Amendment until this office determines that it is complete, the appropriate level of environmental review under NEPA is completed, you provide the financial guarantee required under §3809.552, the financial guarantee is accepted and successfully adjudicated, and BLM notifies you that you may begin operations.

In the June 10, 2010, meeting between the BLM, Desert Hawk Gold Corporation (Desert Hawk), and NAE, Rick Havenstrite stated that Desert Hawk would be hiring a consultant to prepare the Environmental Assessment (EA) for the Plan Amendment. As discussed in that meeting, we recommend for your consultant to meet with the BLM prior to beginning work on the EA to outline the scope and format of the NEPA analysis.

Please submit the requested information within 60 days of receipt of this letter. If we do not receive the requested information from you in the allotted time, we will consider your Plan Amendment to be withdrawn. An exception to the 60 day requirement is the Humidity Cell test results which will take longer than 60 days to obtain. Therefore, in the next 60 days, please submit proof than you have begun the Humidity Cell test.

If you have any questions, or require additional information, please contact Stephen Allen or Larry Garahana of my staff at (801) 977-4360 or (801) 977-4371.

Sincerely,

Michael G. Nelson Assistant Field Manager,

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Nonrenewable Resources

cc: UDOGM, Leslie Heppler, 1594 West No. Temple, Ste. 1210# Box 145801, SLC, UT 84114-5801

Mr. O. Jay Gatten, North American Exploration, Inc. 447 North 300 West, Suite #3 Kaysville, Utah 84037-4203